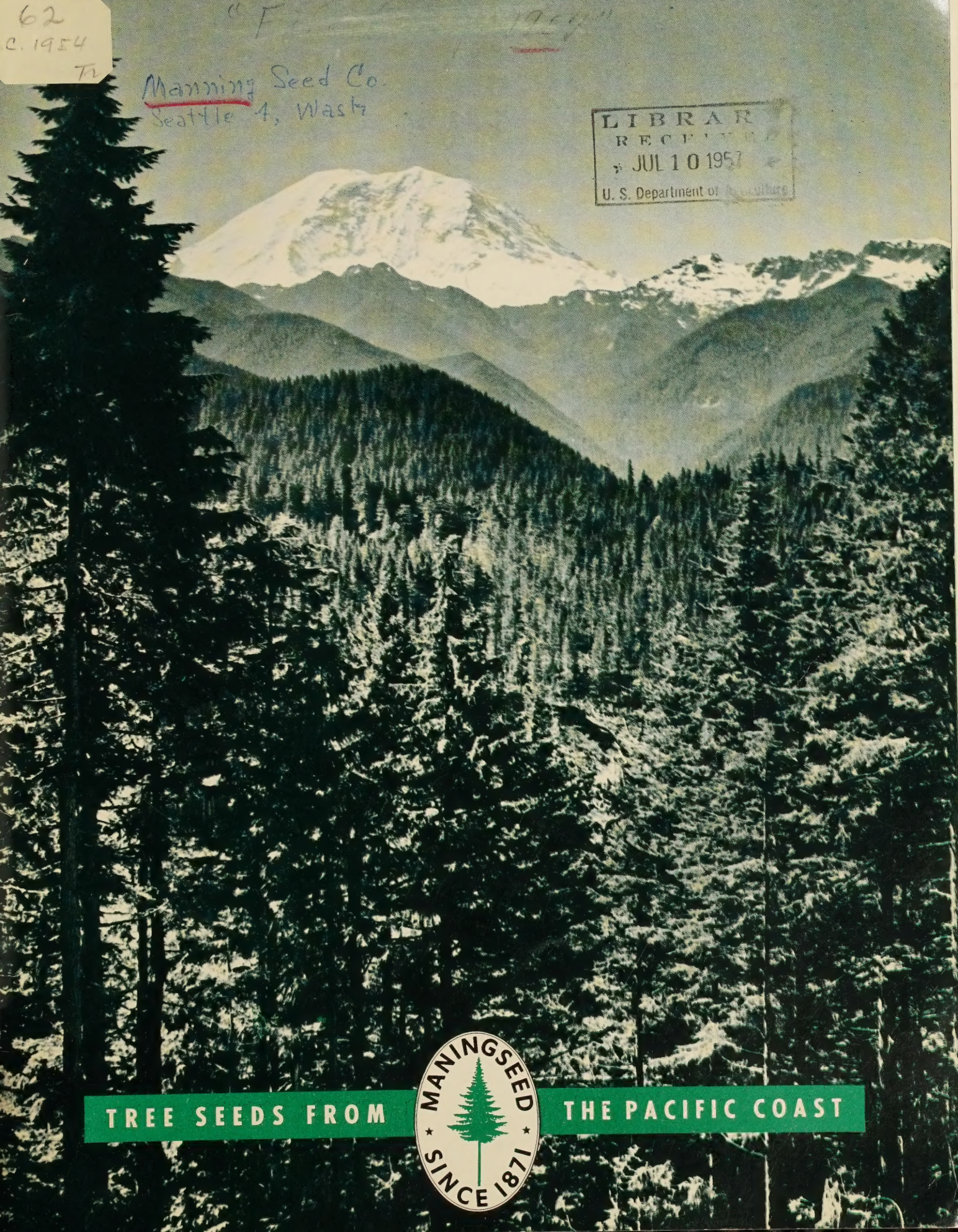
Manning Seed Co.
Seattle 4, Wash



TREE SEEDS FROM MANINGSEED SINCE 1871 THE PACIFIC COAST

Nature understands no jesting;
she is always true, always serious, always severe;
she is always right, and the errors and faults are always those of man. The man incapable of appreciating her she despises and only to the apt, the pure and the true, does she resign herself and reveal her secrets.

GOETHE

This booklet prepared by the

MANNING SEED COMPANY

Sales offices

DEXTER HORTON BUILDING, SEATTLE 4, WASHINGTON, U.S.A.

Branches

ROY, WASHINGTON, U.S.A.

MASSET, BRITISH COLUMBIA, CANADA

QUALICUM BEACH, BRITISH COLUMBIA, CANADA

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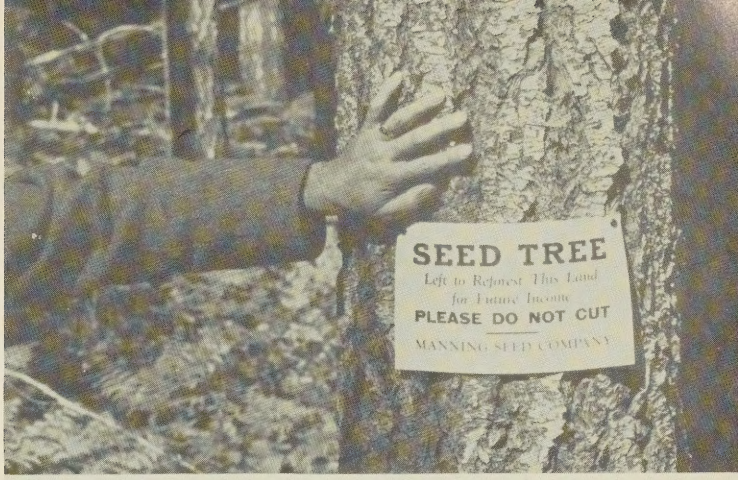

THE MANINGSEED STORY

HISTORY

SEEDS COLLECTED

WEATHER DATA

COLLECTION AREAS

CERTIFIED MANINGSEED

BONDED MANINGSEED

SELECT MANINGSEED

GUARANTEE and TERMS

STORAGE and SHIPPING

ORDERING

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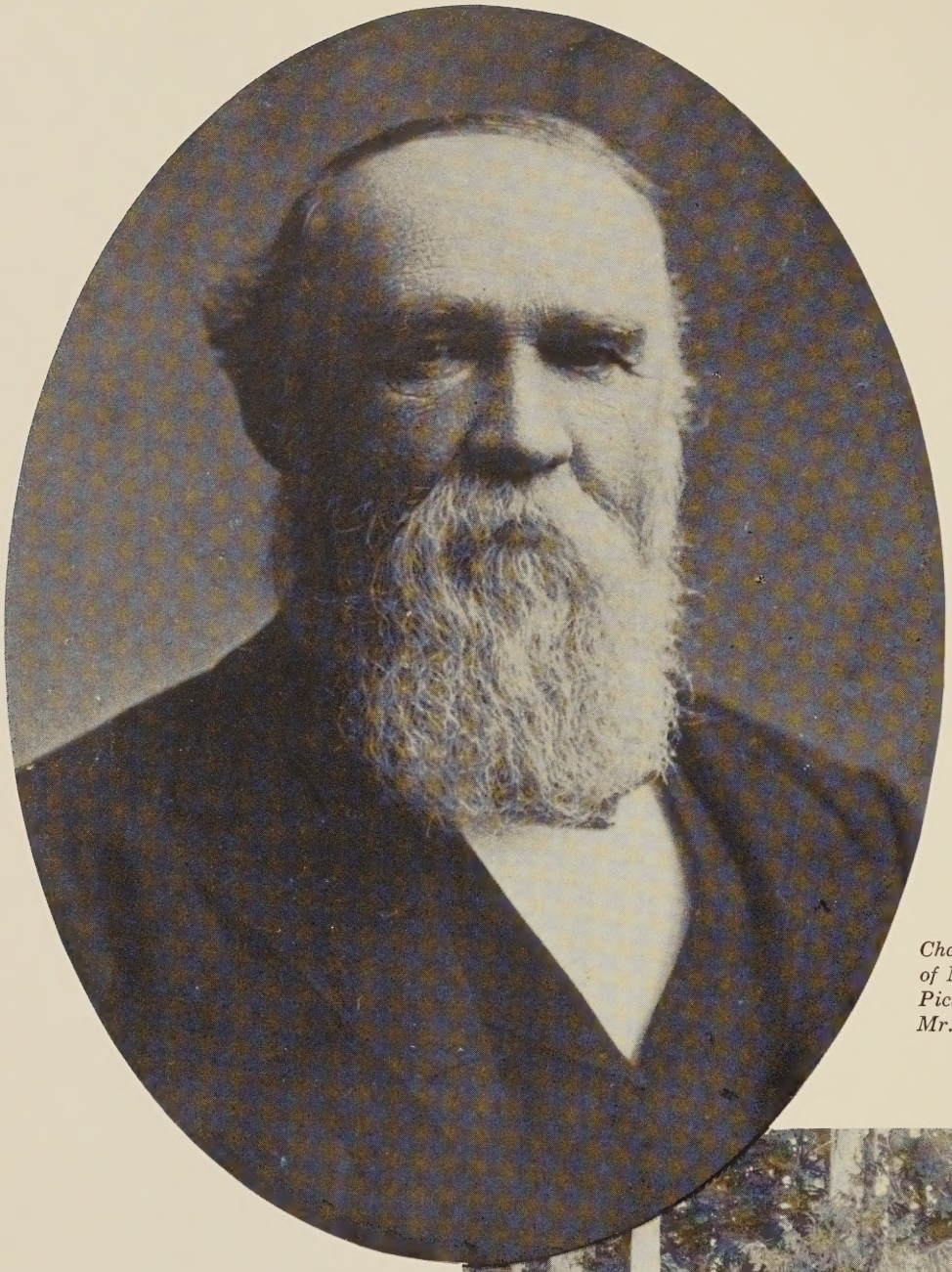
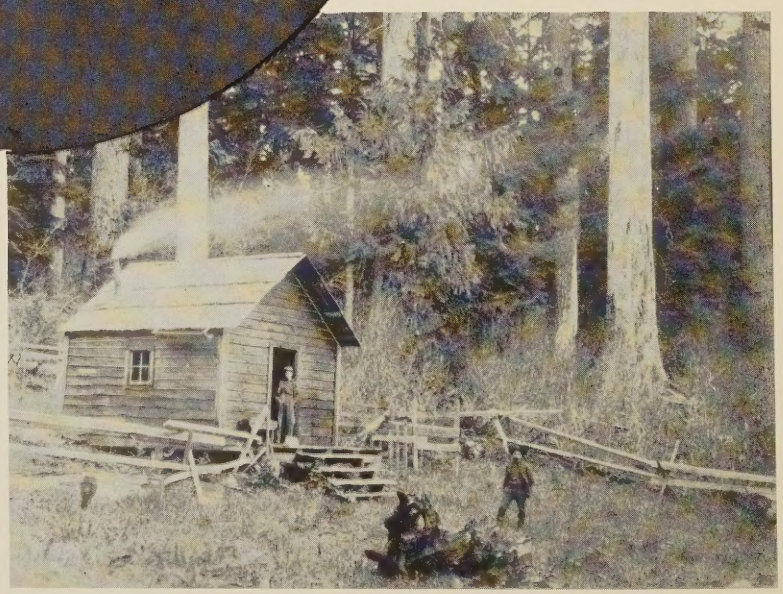


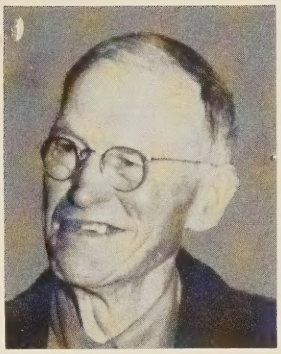
Charles H. Manning, founder of Manning Seed Company. Picture taken in 1899 when Mr. Manning was 61.



Early cone collection headquarters on homestead of W. P. Manning near Doty, Washington Territory, 1884.

W. P. MANNING
Chairman of the Board

F. E. MANNING
President and General Manager



C. H. MANNING, JR.
Vice-President

MARY K. MANNING
Secretary-Treasurer

ISTORY OF MANINGSEED

THE MANNING SEED COMPANY was founded by Charles H. Manning who, in 1870, had traveled west from his birthplace in Schenectady, New York, with his wife and young family, to seek his fortune. In 1871 his travels took him from San Francisco to Astoria, Oregon. Astoria was a young town—rough and tough—but there were plenty of salmon in the Columbia River and huge, untouched stands of big Douglas fir trees mixed with giant Western Red Cedar and Hemlock at the river's edge for the taking. It was from these virgin forests that he collected the first seed which was shipped by boat to San Francisco and thence East by train to dealers on the Atlantic Coast.

After the big Astoria fire of 1883, Charles H. Manning moved up the Columbia River to Fort Vancouver in Washington Territory, where he and his sons, Joseph A. Manning, William P. Manning and Charles H. Manning, Jr., collected cones and crude botanical drugs to fill the orders which continued to flow from the East and now from Europe, as well. In 1888 the urge to go North led the family to Centralia, Washington, where a seed extractory was built and operated. Shortly thereafter

Charles H. Manning, Sr. moved to Roy, Washington. Here he erected his first large, four-story cone-drying kiln and seed extractory and it is on this very site that our present-day modern seed extractory is located. C. H. Manning, Sr. died in 1910. The three sons carried on the business with W. P. Manning as president until 1949 when his son, F. E. Manning, became the President and General Manager. Down through the years all our processes from cone gathering to seed shipping have steadily improved until today the Manning Seed Company is recognized as an outstanding leader in the forest tree seed industry.

Over the years it has become more apparent that if our customers, both foreign and domestic, were to obtain the maximum yield from the seed planted, that more specific data was needed regarding growing conditions of the forests from which the cones were collected. It has long been the goal of the Manning Seed Company to fill this need. In 1949 the Company set up an identification system by which all seed lots are accurately identified as to the collection source. Today's foresters know the importance of *seed origin* for the success of current and future reforestation programs.

Manning Seed Company plant at Roy, Washington, 1954.

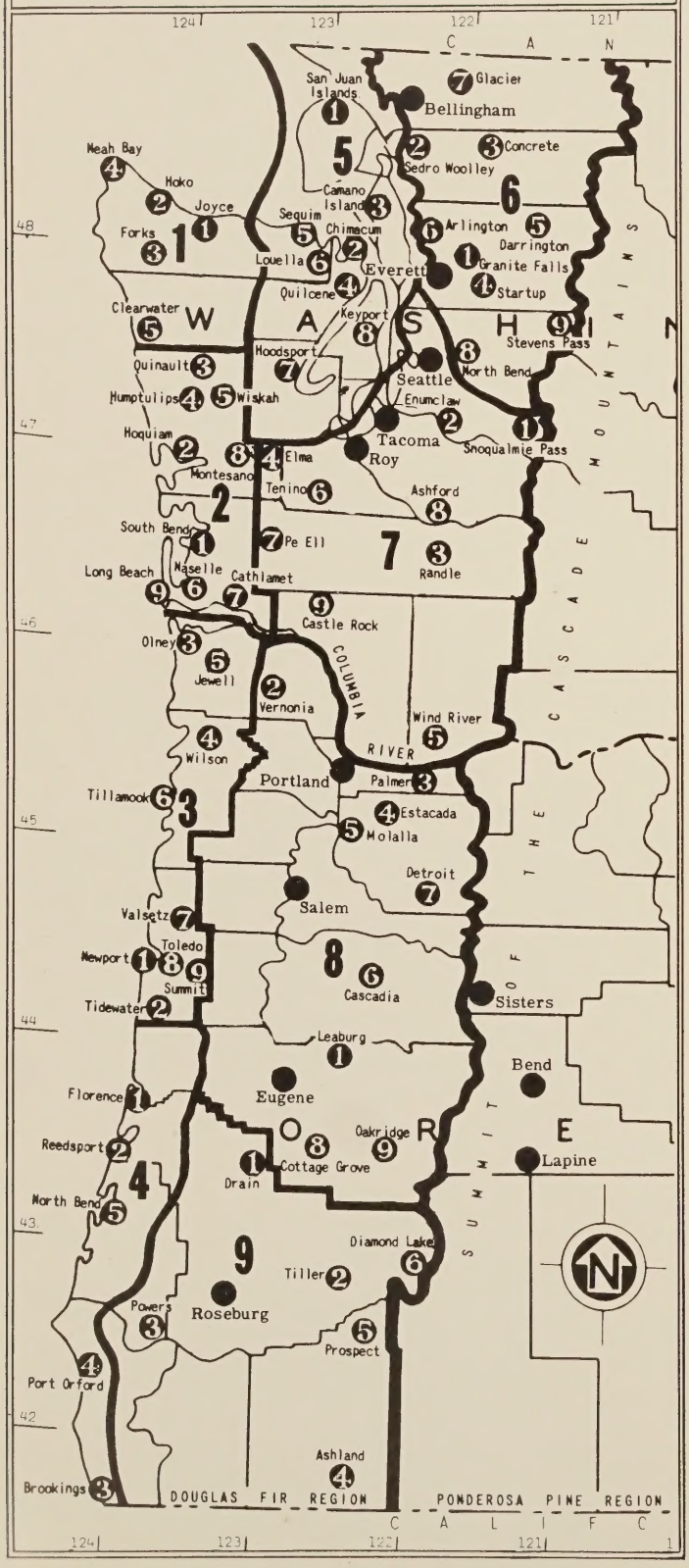
WEST COAST FOREST TREE SEEDS

COLLECTED ANNUALY BY THE MANNING SEED COMPANY

BOTANICAL NAME	COMMON NAME
Chamaecyparis	
Chamaecyparis lawsoniana	Port Orford Cedar
Chamaecyparis nootkatensis	Alaska Yellow Cedar
Thuja	
Thuja plicata	Western Red Cedar
Abies	
Abies lasiocarpa	Alpine Fir
Abies concolor	White Fir
Abies grandis	Grand Fir or Lowland White Fir
Abies magnifica	California Red Fir
Abies nobilis (Abies procera)	Noble Fir
Abies amabilis	Silver Fir
Tsuga	
Tsuga heterophylla	Western Hemlock
Tsuga mertensiana	Mountain Hemlock
Pseudotsuga	
Pseudotsuga taxifolia (viridis)	Douglas Fir—Washington, Oregon and Canada
Larix	
Larix occidentalis	Western Larch
Pinus	
Pinus lambertiana	Sugar Pine
Pinus ponderosa	Western Yellow Pine
Pinus jeffreyi	Jeffrey Pine
Pinus contorta	Lodgepole Pine
Pinus contorta—var. murrayana	Mountain variety, Lodgepole Pine
Pinus monticola	Western White Pine
Picea	
Picea engelmannii	Engelmann Spruce
Picea pungens	Blue Spruce—Colorado
Picea sitchensis	Sitka Spruce—Washington, Oregon, Canada or Alaska
Picea glauca	Western White Spruce
Sequoia	
Sequoia gigantea	Big Tree
Sequoia sempervirens	Redwood

MANING

WASHINGTON and OREGON
Seed Collection Regions



Maningseed Region and Zone Number	LOCATION				
	Nearest City	State	County	Township	Range
11	Joyce	Wash.	Clallam	31 N	8 W
12	Hoko	Wash.	Clallam	30 N	14 W
13	Forks	Wash.	Clallam	28 N	13 W
14	Neah Bay	Wash.	Clallam	33 N	15 W
15	Clearwater	Wash.	Jefferson	24 N	12 W
21	South Bend	Wash.	Pacific	14 N	9 W
22	Hoquiam	Wash.	Grays Harbor	17 N	10 W
23	Quinault	Wash.	Grays Harbor	23 N	9 W
24	Humptulips	Wash.	Grays Harbor	20 N	10 W
25	Wiskah*	Wash.	Grays Harbor	21 N	8 W
26	Naselle	Wash.	Pacific	10 N	9 W
27	Cathlamet	Wash.	Wahkiakum	8 N	6 W
28	Montesano	Wash.	Grays Harbor	17 N	7 W
29	Long Beach	Wash.	Pacific	10 N	11 W
31	Newport	Ore.	Lincoln	11 S	11 W
32	Tidewater	Ore.	Lincoln	13 S	10 W
33	Olney	Ore.	Clatsop	7 N	8 W
34	Wilson	Ore.	Tillamook	1 N	7 W
35	Jewell	Ore.	Clatsop	5 N	6 W
36	Tillamook	Ore.	Tillamook	1 S	9 W
37	Valsetz	Ore.	Polk	8 S	8 W
38	Toledo	Ore.	Lincoln	11 S	10 W
39	Summit	Ore.	Benton	11 S	7 W
41	Florence	Ore.	Lane	19 S	11 W
42	Reedsport	Ore.	Douglas	21 S	12 W
43	Brookings	Ore.	Curry	41 S	13 W
44	Port Orford	Ore.	Curry	33 S	15 W
45	North Bend	Ore.	Coos	25 S	13 W
51	San Juan Island	Wash.	San Juan	36 N	3 W
52	Chimacum	Wash.	Jefferson	29 N	1 W
53	Camano	Wash.	Island	33 N	2 E
54	Quilcene	Wash.	Jefferson	27 N	2 W
55	Sequim	Wash.	Clallam	30 N	3 W
56	Louella	Wash.	Jefferson	28 N	3 W
57	Hoodsport	Wash.	Mason	22 N	4 E
58	Keyport	Wash.	Kitsap	26 N	1 E
61	Granite Falls	Wash.	Snohomish	30 N	7 E
62	Sedro Woolley	Wash.	Skagit	35 N	4 E
63	Concrete	Wash.	Skagit	35 N	8 E
64	Startup	Wash.	Snohomish	28 N	9 E
65	Darrington	Wash.	Snohomish	32 N	9 E
66	Arlington	Wash.	Snohomish	31 N	5 E
67	Glacier	Wash.	Whatcom	39 N	7 E
68	North Bend	Wash.	King	24 N	8 E
69	Stevens Pass	Wash.	King	26 N	13 E
71	Snoqualmie Pass	Wash.	King	22 N	11 E
72	Enumclaw	Wash.	King	20 N	7 E
73	Randle	Wash.	Lewis	12 N	7 E
74	Elma	Wash.	Grays Harbor	18 N	6 W
75	Wind River	Wash.	Skamania	4 N	7 E
76	Tenino	Wash.	Thurston	16 N	1 W
77	Pe Ell	Wash.	Lewis	13 N	5 W
78	Ashford	Wash.	Pierce	14 N	5 E
79	Castle Rock	Wash.	Cowlitz	10 N	1 E
81	Leaburg	Ore.	Lane	17 S	1 E
82	Vernonia	Ore.	Columbia	4 N	4 W
83	Palmer	Ore.	Multnomah	2 N	7 E
84	Estacada	Ore.	Clackamas	3 S	4 E
85	Molalla	Ore.	Clackamas	5 S	2 E
86	Cascadia	Ore.	Linn	13 S	1 E
87	Detroit	Ore.	Marion	10 S	5 E
88	Cottage Grove	Ore.	Linn	20 S	3 W
89	Oak Ridge	Ore.	Lane	21 S	3 E
91	Drain	Ore.	Douglas	22 S	5 W
92	Tiller	Ore.	Douglas	30 S	6 W
93	Powers	Ore.	Coos	31 S	12 W
94	Ashland	Ore.	Jackson	39 S	1 E
95	Prospect	Ore.	Jackson	32 S	3 E
96	Diamond Lake	Ore.	Douglas	27 S	6 E

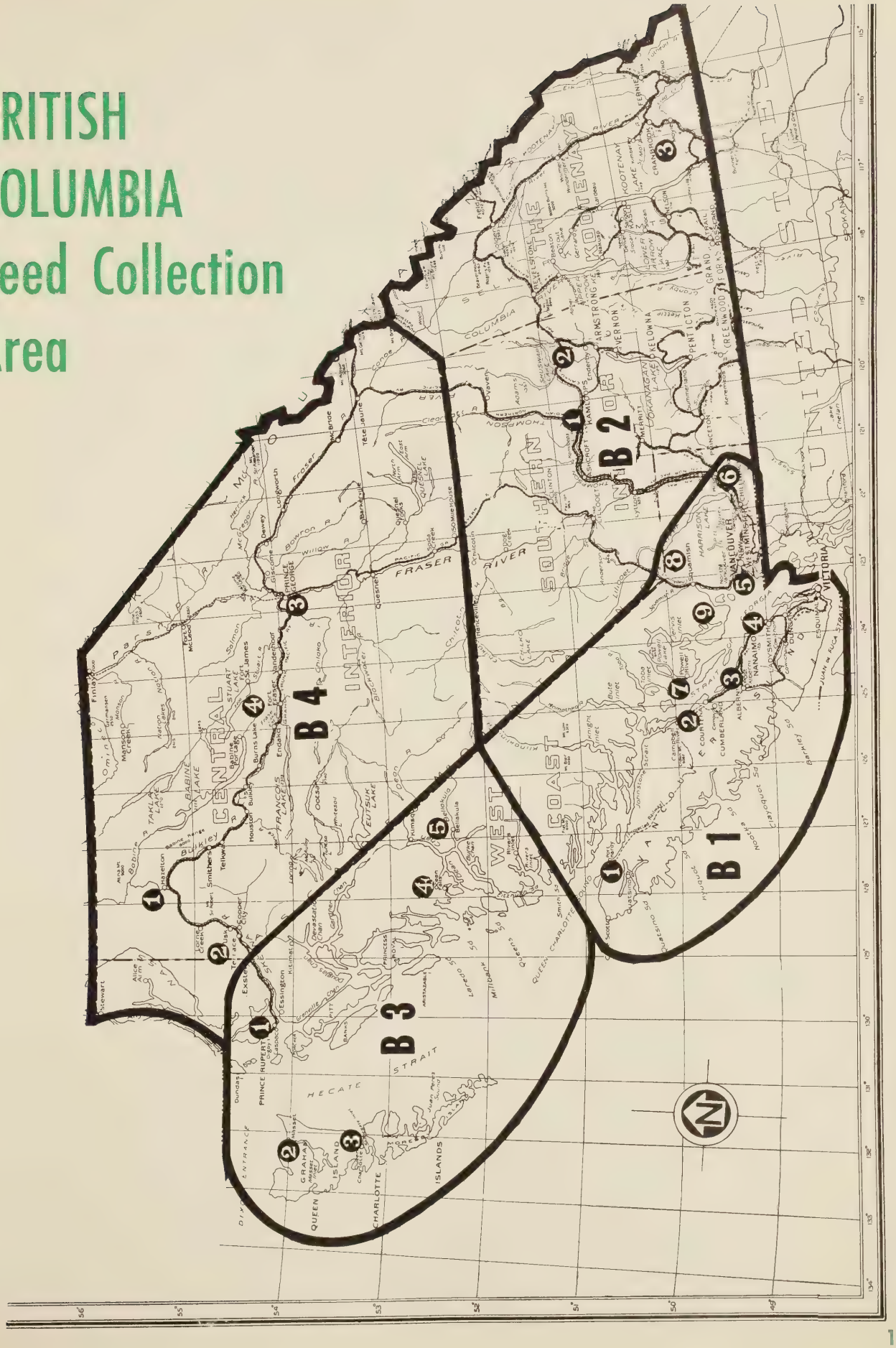
* Asterisk indicates weather data is not available.

SEED WEATHER DATA

MOST REPRESENTATIVE WEATHER STATION										
				TEMPERATURE				PRECIPITATION		
Latitude North	Longitude West	Name	Elevation in Feet	Average Summer (°F)	Average for Year (°F)	Absolute Maximum (°F)	Absolute Minimum (°F)	Summer (Inches)	Annual (Inches)	Number of Frost Free Days
48° 10′	123° 40′	Port Crescent	75	*	47	93	7	8.5	40	203
48° 10′	124° 25′	Clallam Bay	70	54	48	97	8	18	80	176
47° 50′	124° 24′	Forks	375	56	49	101	—4	26	115	174
48° 25′	124° 35′	Tatoosh Island	50	52	48	88	7	21	84	311
47° 05′	124° 25′	Clearwater	250	56	49	100	11	30	123	199
46° 40′	123° 45′	South Bend	50	57	51	103	4	19	83	202
47°	123° 50′	Hoquiam	10	56	50	96	21	14	62	*
47° 30′	123° 50′	Quinault	210	58	51	104	11	30	126	208
47° 15′	123° 50′	Quinault South Bend	200	57	51	103	7	25	105	205
47° 10′	123° 50′	Wiskah	435	*	*	*	*	29	119	*
46° 20′	123° 40′	Naselle	25	*	*	*	*	23	111	*
46° 10′	123° 25′	Cathlamet	476	*	*	*	*	17	81	*
47°	123° 40′	Satsop	40	*	*	*	*	14	64	*
46° 20′	124°	North Head	196	54	50	97	11	14	59	297
44° 40′	124°	Newport	155	54	51	100	1	17	66	248
44° 20′	123° 50′	Tidewater	30	60	53	*	*	20	89	*
46° 05′	123° 40′	Astoria Exp. Station	50	57	50	104	11	16	66	275
45° 50′	123° 30′	Glenora	575	57	49	106	3	27	129	140
45° 50′	123° 25′	Jewell	700	57	50	103	—4	14	69	166
45° 55′	124°	Tillamook	26	55	51	101	0	22	94	182
44° 45′	123° 40′	Valsetz	1150	57	50	*	*	23	114	*
44° 40′	124°	Toledo	200	57	52	102	8	16	76	195
44° 40′	123° 45′	Summit	720	*	*	*	*	12	62	*
44°	124°	Canary	50	57	52	*	*	15	75	*
43° 40′	124°	Reedsport	50	57	52	*	*	14	73	*
42°	124° 10′	Brookings	162	56	53	100	17	15	75	269
42° 40′	124° 30′	Port Orford	270	56	50	90	15	14	70	286
43° 25′	124° 10′	North Bend	203	56	51	*	*	13	52	*
48° 30′	123°	Olga	100	56	50	92	—3	8	29	229
48° 05′	122° 50′	Chimacum	100	*	*	*	*	8	22	*
48° 15′	122° 20′	Coupeville	50	56	50	96	5	7	19	208
47° 45′	122° 50′	Quilcene	124	58	50	102	0	12	47	167
48° 8′	123°	Sequim	200	56	49	99	—3	5	16	184
47° 50′	123°	Louella	1100	55	48	95	0	15	52	150
47° 25′	123° 15′	Cushman Dam	790	62	51	104	3	19	96	209
47° 40′	123° 25′	Keyport	17	59	52	99	10	7	33	210
48° 05′	122°	Granite Falls	600	58	50	100	1	20	60	190
48° 30′	122° 10′	Sedro Woolley	56	*	50	99	—1	*	46	183
48° 30′	121° 45′	Concrete	243	60	51	106	—1	15	61	204
47° 50′	121° 45′	Startup	560	59	52	106	5	19	49	219
48° 10′	121° 35′	Darrington	550	57	49	105	—11	17	76	145
48° 15′	122° 10′	Arlington	205	*	*	*	*	14	46	*
48° 50′	122°	Glacier	937	56	47	101	—9	16	54	150
47° 30′	121° 50′	Snoqualmie Falls	430	59	51	104	3	16	55	172
47° 45′	121° 05′	Stevens Pass	4061	49	40	95	—11	19	55	*
47° 25′	121° 30′	Snoqualmie Pass	3010	51	42	101	—17	21	95	115
47° 15′	122°	Mud Mountain	1308	56	49	99	7	18	47	*
46° 40′	121° 50′	Randle	912	*	*	*	*	13	57	*
47°	123° 30′	Elma	250	58	49	104	5	14	59	184
45° 45′	121° 30′	Wind River	1130	58	48	107	—13	17	87	134
46° 45′	122° 40′	Centralia	182	59	51	105	—16	11	45	175
46° 45′	123° 15′	Centralia	182	59	51	105	—16	11	45	175
46° 35′	122°	Mineral	1440	*	*	*	*	17	76	*
46° 15′	123°	Kid Valley	690	56	48	100	13	16	50	175
43° 45′	123°	Leaburg	675	61	52	*	*	14	57	97
45° 50′	123° 15′	Vernonia	748	58	50	104	1	11	50	188
45° 50′	122° 15′	Bonneville	85	63	53	107	7	15	66	*
45° 20′	122° 20′	Cazadero	414	60	53	109	—6	14	55	194
45° 15′	122° 15′	Molalla	100	*	*	*	*	12	42	*
44° 25′	122° 40′	Cascadia	796	60	51	101	2	17	62	185
44° 40′	122° 10′	Detroit	1450	58	49	*	*	16	70	166
43° 50′	123°	Cottage Grove	822	59	52	105	—7	10	43	166
44° 10′	122° 50′	Oak Ridge	1313	62	53	110	0	10	38	187
43° 40′	123° 15′	Drain	302	60	53	107	—1	8	44	187
43°	123° 30′	Riddle	703	61	54	110	3	6	29	200
43° 15′	124° 10′	Powers	300	60	54	*	*	10	58	*
42° 10′	122° 45′	Ashland	1956	61	53	106	—1	6	20	182
42° 45′	122° 30′	Prospect	2473	58	50	105	—12	8	39	108
43° 05′	122° 05′	Diamond Lake	...	47	*	*	*	11	49	*

CALIFORNIA Seed Collection Area

BRITISH COLUMBIA Seed Collection Area



CERT

Section of cone storage racks at Manning Seed Company plant, Roy, Washington.

Forestry leaders from Austria, Belgium, Denmark, Germany, Luxemburg, Norway and Sweden inspecting kiln temperature controls at Manning Seed Company plant, 1950.

IFIED MANINGSEED

FOR MANY YEARS, the Manning Seed Company has been aware of the great effect of seed origin on future productivity of forest plantations. In 1949 the Company embarked on a cone procurement and seed extraction program that would enable it to positively certify all seed sold as to its climatic zone and elevation of origin.

To the tree seed users of the world, the value of such identification data is self-evident. It is the desire of the Manning Seed Company to make its customers fully conversant with the methods by which collection areas are divided, so that they can be easily identified. Seed purchasers can then advantageously use the data accompanying all Certified Maningseed shipments.

While it is recognized that there are many factors in addition to climate which affect tree seed productivity and growth, it is believed that climatic zones are the most readily recognized and helpful factors on which to base seed origin. Seed collected within these zones will carry, also, racial characteristics influenced by such factors as soil, slope, aspect and micro-climate that can be isolated and kept separate under MANINGSEED collection methods which are hereafter described.

The Manning Seed Company's major collection areas lie in Western Washington and Western Oregon. Following is an explanation of how this area is divided into seed collection zones. Alaska, British Columbia and California are divided into seed collection zones on a similar climatical basis.

West of the summit of the Cascade Mountains lie the world's best Douglas fir forests. Based on general climatic data, this area has been divided into *nine seed collection regions,* numbered 1 to 9 on our map, page 8. The basic climatic characteristics of each region can be broken down as follows:

The so-called "*fog-belt*" between the Coast mountain range and the Ocean, on the coast of Washington and Oregon, has been divided into regions 1 to 4, based

Typical Maningseed producer cone receiving station.

largely on latitude changes. This area is characterized by heavy annual precipitation varying from 50 to 130 inches, being heaviest in the northern part of Region 1. The average annual temperature of these regions varies from approximately 49° in the north to 55° in the south.

Region 5, which includes the western shore and islands of Puget Sound, is a warm one because of the moderating influence of Puget Sound, and is relatively dry because of the rain shadow effect of the Olympic Mountains to the southwest.

The drier interior valleys between the Coast and the Cascade mountain ranges that extend from Puget Sound in Washington to the Siskiyou Mountains in Oregon, are divided into Regions 6 to 9. This division is made mainly on the basis of latitude—Region 9 on the average being somewhat drier and warmer than Region 6.

Reference is made to Maningseed Collection maps on pages 8-11. Here it will be noted that the centers of *seed collection zones* within each region are indicated by numbered dots. Each dot represents a town or site of a U. S. Weather Bureau Station for which reliable weather records are available. The locality specification given to each lot of CERTIFIED MANINGSEED, therefore, means that the cones were collected in areas most nearly characterized for climate by the weather records pertaining to the numbered seed collection region and zone shown on the map. These specifications are indicated on the container in which the seeds are finally shipped. Following is a breakdown of the identification data carried on each seed container:

The lot number consists of two figures: the first indicating the seed collection

region, the second the seed collection *zone*. Thus, seed collected in the vicinity of the weather station at Forks, in northwestern Washington, would be designated as "13"—Region 1, Zone 3.

This is followed by the numbers which indicate elevation in thousands of feet. Elevations are specified to the nearest 500 feet. Elevations of 0-500 feet are specified as -0.5, 500-1000 feet as -1.0, and in like manner for whatever the elevation of collection may be. Hence, the complete designation of the seed from Forks would be: Lot Number 13-0.5, meaning that the cones were collected in Region 1, Zone 3, between sea level and 500 feet elevation.

As each sack of cones is collected, it is tagged and marked with all identifying information, as shown above, and from this point of collection through the processes of refinement to shipment to our customers, this tag is the means by which all seed lots are kept accurately separated and identified.

Elevations are generally specified to the nearest 500 feet, which may appear rather broad by Northern European standards. However, it must be kept in mind that Western North America is a region of extremely rugged topography, particularly in those areas now forested. Single, relatively unbroken slopes of 2,000 to 3,000 foot differences in elevation are not unusual. To attempt to narrow down more precisely the elevations from which cones are collected would only add to the collection costs, and would be of no particular benefit to the purchaser. Furthermore, it should be remembered that the latitude of the Douglas fir region is low compared to the

Helicopter direct seeding with Certified Maningseed, Tillamook Burn, Oregon 1950.

Imported seed cleaning machine at Manning Seed Company Plant, Roy, Washington.

latitudes at which Douglas fir is commonly planted in Europe. (The International Boundary between Canada and the United States follows the 49th parallel.) Therefore, the effects of elevation of origin of the Douglas fir on growth may be expected to be correspondingly less than, for example, on Scots pine in Sweden.

Here, then, is how CERTIFIED MANINGSEED is actually collected. Each year, more than 25,000 miles are covered in road reconnaissance and an almost equal survey is made by air of the major forests extending from Alaska to California, to determine the areas in which it will be practicable to make cone collections. It serves also as a basis of first-hand information on which Manning Seed Company can forecast to its customers the probable seed crops from specific areas.

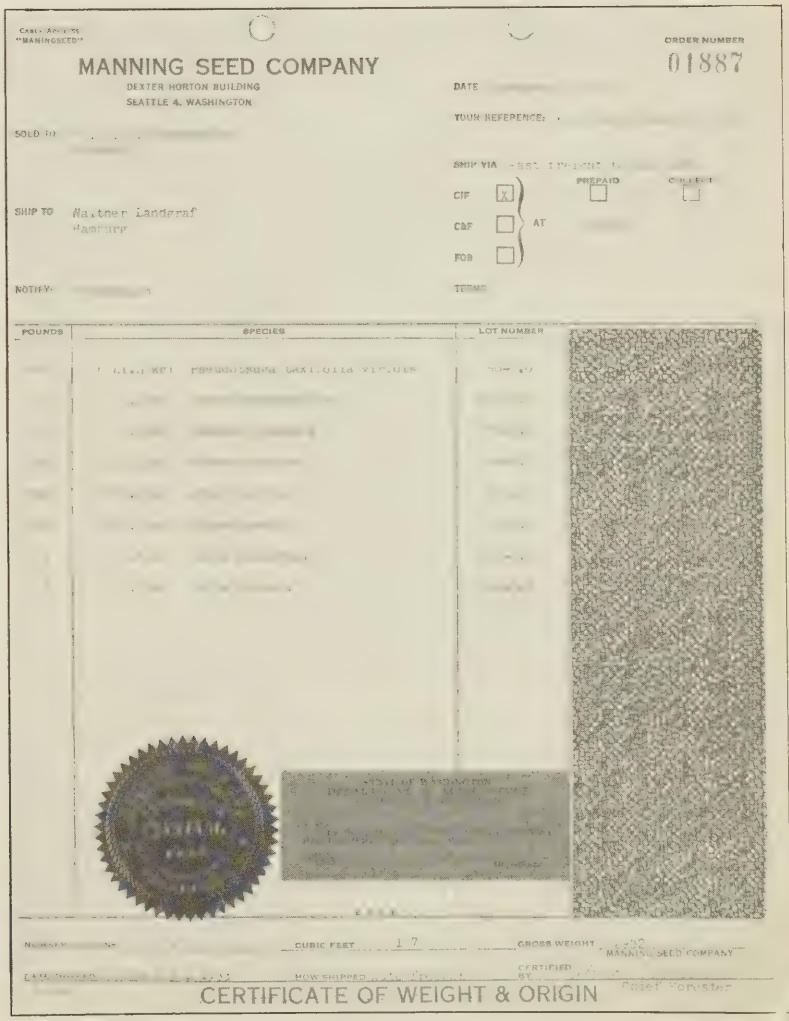
When a cone crop appears fairly certain, cone collecting units are then established in each important area by Company representatives known as "Producers"—men who reside in the region; these men have had years of experience in the important techniques of cone collecting, and are able to employ reliable cone pickers. Orders for certain quantities of cones are then sent to these Producers, calculated on the anticipated demand for MANINGSEED from these particular regions. It is for this reason that orders should be placed well in advance of the picking season, which is naturally short, since seed once shed is never recovered for the selling market.

While Douglas Fir is the dominant species of this region, and the one most extensively studied, it is not the only species from the Pacific Northwest. Seed origin is vastly important to those who plant other species of conifers native to Western

North America, and maps, climatic tables and other information on seed collection zones and regions, are equally valuable for specifying origins of other species such as Western hemlock, Western red cedar, Grand fir, Lodgepole pine, and Sitka spruce growing in Oregon, Washington, British Columbia and Alaska, as well as for Ponderosa pine, Sugar pine and many others in California.

Positive recommendations for the use of seed of specific origins can be made only after long-term experiments and knowledge of the areas where plantings are to be made. The Manning Seed Company is not set up to make such recommendations, nor does it attempt to do so. However, as a service to its customers, in the selection of seeds most likely to thrive on their plantations, there has been tabulated on pages 8 and 9 climatic data which it is felt would be helpful in making the proper selections. For the states of Washington-Oregon, 69 different seed collection zones in the 9 seed collection regions are shown. Thirteen collection zones in 4 regions are shown for Alaska, 21 zones in 4 regions for British Columbia, and 25 zones in 12 regions for California. There are numerous 500 foot elevation belts located within these zones, so that there are several hundred origin specifications for CERTIFIED MANINGSEED in these locales.

Much time and effort has been expended in our Company's sincere desire to serve our customers. We will continue our efforts to make CERTIFIED MANINGSEED a product of which we can be justly proud to distribute and have accepted in world-wide markets.


MANNING SEED COMPANY
DEXTER HORTON BUILDING
SEATTLE 4, WASHINGTON
ORDER NUMBER
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DATE
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SOLD TO
SHIP VIA
PREPAID
COLLECT
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C&F
FOB
AT
SHIP TO
NOTIFY
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SPECIES
LOT NUMBER
CUBIC FEET
GROSS WEIGHT
MANNING SEED COMPANY
CERTIFIED BY
CERTIFICATE OF WEIGHT & ORIGIN

Certificate of Weight and Origin Supplied with all Certified Maningseed.

BONDED MANINGSEED

BONDED MANINGSEED is collected under the supervision of professional foresters from stands specified and described by the Manning Seed Company. The information furnished with BONDED MANINGSEED specifies the location of the stand from which the cones were collected by township, range and section (a unit in the survey system of lands used in the western part of the United States—a square area one mile on each side), and by elevation zone to the nearest 200 feet. In addition, information on slope, aspect, soil, age, stand condition and most representative U. S. Weather Bureau station is given.

Eleven stands in widely separated areas have been selected as collection points for BONDED MANINGSEED. These are representative of the moist Coastal zone and the drier interior sites. As each of these areas produces a crop of seed, it will be collected and offered for sale as BONDED MANINGSEED. As sufficient demand develops for more collection areas, more will be set up and complete data on them provided. The areas selected at present are:

Forks	13-0.5
Hoquiam	22-0.5
Jewell	35-0.5
Brookings	43-0.5
Louella	56-1.5
Darrington	65-0.5
Granite Falls	61-1.0
Pe Ell	77-1.0
Ashford	78-1.5
Palmer	83-1.0
Cascadia	86-2.0

As cone collection is possible in these areas, stand identification date will be taken and published in Manning Seed Company's NEWSLETTERS.

Left: A superior stand of mature Washington State Douglas fir.
—U. S. Forest Service Photo

Svenska Flaktfabriken automatic electric cone dryer for small lot seed extraction. Manning Seed Company Plant, Roy, Washington.

One-Pound Lead-Sealed Bag of Bonded Maningseed.

Lot No. _____ Order No. _____ Date _____

MANNING SEED COMPANY

INCORPORATED UNDER THE LAWS OF THE STATE OF WASHINGTON

BONDED MANINGSEED

THIS IS TO CERTIFY *that this shipment of* _____ *pounds* _____
COMMON NAME

_____ *Forest tree seed was collected and treated as indicated below.*
LATIN NAME

Source of seed furnished: Region _____ *State* _____ *County* _____

Township _____ *Range* _____ *Section* _____ *Latitude* _____ *Longitude* _____

Elevation _____ *Feet. Site Class* _____ *Stand Age* _____ *Stand Vigor* _____

Aspect _____ *Soil* _____ *Slope* _____ % *Cut test* _____ % *Purity* _____ %

Name of most representative U.S. Weather Bureau Station _____

WITNESS *the seal of said corporation and the signature of its duly authorized officer.*

MANNING SEED COMPANY
DEXTER HORTON BUILDING
SEATTLE 4, WASHINGTON, U.S.A.

COUNTERSIGNED:

BY: _____
CHIEF FORESTER

_____
PRESIDENT

MANINGSEED SINCE 1871

Maningseed Bond of Origin and Quality Supplied with all Orders of Bonded Maningseed.

Leo A. Isaac, silviculturist of the Pacific Northwest Forest and Range Experiment Station, Portland, Oregon, examining graft of scion material from Granite Falls, Washington, made by Professor Jack Duffield, College of Forestry, University of Washington, at Research Acres, Manning Seed Company Tree Seed Orchard near Eatonville, Washington. Left to right: Isaac, Frank Manning, Jack Cameron, Manning Seed Company Chief Forester, Bill Manning and Duffield.

SELECT (ORCHARD GROWN)

MANINGSEED

"Forestry is the only great industry that has done little or nothing to improve its wild stock under management; practically nothing has been done to improve Douglas fir and other important western species."

Forest geneticists have demonstrated that a collection of superior parents (known as "plus" trees), selected on the basis of superiority of diameter and height growth as compared with the surrounding trees, and also on the basis of having the most acceptable type of branching or crown, can produce progeny that are superior to any stand found in nature.

Using this principle, the production of Select (Orchard Grown) Maningseed has been started. Scions from carefully selected "plus" trees are being assembled at Research Acres—Manning Seed Company's tree seed orchard, and seed from these parents will soon be placed on the open market.

The theory underlying forest tree seed orchards is simple enough. It is merely that, in the long run, the best plants will be obtained by mating the best parents available. While it is true that in certain exceptional forest stands, good parents may stand within pollinating range of each other, it is also true that such stands contain some average and poorer than average trees. Thus, seed collected only from the best parents in natural stands is likely to result in part, at least, from pollination by average and poorer than average trees. Such a situation can be partially remedied by

removing all but the good trees. However, if one sets his standards of excellency high enough, this procedure may leave very few parents within pollinating range of each other.

It is necessary, therefore, to bring together highly selected parents in special seed orchards.

In the Spring of 1954, the first MANINGSEED orchard was established in Western Washington. Within five years, small quantities of SELECT MANINGSEED should be available from this orchard, which represents a pioneering venture in the production of selected American forest tree seed for the open market.

One of the Plus Trees used for scion stock on Manning Seed Company Tree Seed Orchard. Tree located on McCleary Experimental Forest operated jointly by the Pacific Northwest Forest and Range Experiment Station Puget Sound Research Center and the Simpson Logging Company.

GUARANTEE and TERMS

CERTIFICATION of tree seed means that the seed is affirmed to be of the quality and from the source stated. Guarantees imply knowledge of the qualities guaranteed. Nothing can be stated as true which is not positively known by the collector or that cannot be positively proven by testing.

The Manning Seed Company guarantees the following factors pertaining to seed quality: (1) Provenance; (2) Trueness to name; (3) Cut test; and (4) Purity.

Because many factors beyond our control affect germination and subsequent growth of seed, we believe that a stated germination percentage cannot be guaranteed.

All Maningseed invoices carry this statement which is the extent of our guarantee:

> "Maningseed is of the highest available quality. All seeds are guaranteed to be true to name, provenance and of reasonable purity but so many factors enter into the germination and subsequent growth of seeds that no warranty is given, expressed or implied in respect to germination of crops. It is desired that every customer be perfectly satisfied with the seed purchased. If claims are made they must be sent to us in writing promptly upon receipt of the merchandise. We cannot consider claims made after seeds have been stored, planted, fumigated, dyed or otherwise processed."

While our regular terms are cash, we will be pleased to make credit arrangements with established concerns. Open accounts are payable on or before the 10th of the month following date of delivery. Overdue accounts are subject to interest charge at a legal rate. No cash discount will be allowed as it is our policy to maintain attractive prices consistent with Maningseed quality. It is understood that all orders accepted are subject to availability of crop.

Loading plane for air shipment of Maningseed to Europe.

Typical shipment of Maningseed being loaded aboard ocean liner.

STORAGE and SHIPPING

A MATTER of considerable concern to the Manning Seed Company has been the determination of the best method of storing and shipping seed. As a result of early experiments made by the U. S. Forest Service and other agencies, it has been learned that properly handled tree seeds can be stored for long periods of time. In 1950 the Company entered into a formal research program with the Boyce Thompson Institute for Plant Research to determine the survival of certain tree seeds under various methods of storage and shipping. By using the information obtained from these many experiments the Manning Seed Company has developed storage and shipping procedures that assure our customers of receiving seed of the highest quality.

ORDERING MANINGSEED

ORDERS for Maningseed should be booked with us in July and August so that we may attempt to collect seeds to your specifications for shipment in November and December. Seed prices will be established in late September when cone picking begins.

Checking moisture content of Abies grandis seed prior to shipment, with Steinlite Moisture Tester at Manning Seed Company plant.

Cans and cartons used for shipping all Certified Maningseed.

Foresters the world over have come to realize that better forests can be produced by better seed. In keeping with this philosophy we hope that the Manning Seed Company can make a real contribution to this cause by offering even better grades of seed as the years pass.

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HELICOPTER
Aerial Seeding
AVAILABLE NOW!

YOU CAN SEED YOUR LAND THIS FALL

For less than you think! Costs for *both* Rodent Control application and Seeding range from only $5.00 to $9.50 per acre. Let us estimate the cost of both services, including certified tree seed, for *your* cut-over timber land.

GROW TREES FOR PROFIT!

It's simple! For contract price, send us area and location of each individual plot, and name of species in which interested. Or ask our representative to call. Wire or telephone MAin 2716.

PERPETUAL FORESTS, INC.

DEXTER HORTON BUILDING, SEATTLE 4, WASHINGTON

BETTER TREE SEED FOR BETTER FORESTS